

✓

INDIAN JOURNAL
OF
THEORETICAL PHYSICS

VOLUME 18

1970



Published by the
INSTITUTE OF THEORETICAL PHYSICS
BIGNAN KUTIR, CALCUTTA-4

U. of ILL. LIBRARY

AUG 6 - 1971

CHICAGO CIRCULAR

BOARD OF EDITORS

Dr. K. C. Kar, D. Sc.

Dr. B. Sen, D. Sc.

Dr. M. Ghosh, D. Sc.

Dr. P. P. Chattarji, D. Phil.

Dr. (Mrs.) C. Dutta, D. Phil. (*Secretary*)

J. Biswas, M. Sc. (*Asst. Secretary*)

A. Bhattacharyya, M. Sc. (*Asst. Secretary*)

NOTICE TO CONTRIBUTORS

1. The manuscript of each paper for publication in this journal should be typed on one side of the paper and should be accompanied by a short abstract.
2. All the references to the published papers should be numbered serially and given at the end of the paper.
3. Diagram should be drawn on thick white paper in Indian ink. Tables should be typed on separate sheets.
4. The papers to be published in the journal should be original on theoretical physics or on experimental physics with theoretical background.
5. Avoid mathematical steps as far as possible. All mathematical expressions, should be typed as far as possible, with unavailable symbols inserted neatly in ink. Be sure to distinguish between capital and small letters. Avoid complicated superscript and subscripts. Avoid repetition of complicated expression by representing it by a symbol.
6. Letters to the Editor, Review articles and Booklets on recent topics will also be published.
7. Fifty copies of reprints of each paper, except review articles and booklets are given free of cost to the contributor.

All communications to The Secretary, Institute of Theoretical Physics, Bignan Kutir, 4/1, Mohan Bagan Lane, Calcutta-4.

Subscription Rates (net)

Per volume	Rs. 25'00 (Inland)	Single copy	Rs. 7'50 (Inland)
"	\$ 6'00	"	\$ 2'00
"	£ 2-10-0 (<i>Foreign</i>)	"	£ 0-17-0 (<i>Foreign</i>)

Back Volume Rates (net)

Back volumes at \$ 10'00 per volume.

Indian Journal of Theoretical Physics is published quarterly in March, June, September and December.

VOLUME 18

C O N T E N T S

March

	<i>Page</i>
Relativity in the acoustical world	
— <i>K. C. Kar</i>	1
Torsional vibration of non-homogeneous cylindrically aeolotropic cylindrical shell	
— <i>P. R. Ghosh</i>	13
Radial deformation of an annular piezo-electric disk with a concentric inhomogeneous annular rigid inclusion and a symmetrical temperature distribution	
— <i>B. Yadav</i>	19
Twisting of a transversely isotropic circular cylinder embeded in a resisting medium	
— <i>N. Bhanja</i>	29

June

Effect of Cosserats, couple-stress on the stress distribution in a semi-infinite medium with varying modulus of elasticity	
— <i>P. K. De</i>	35
Flow of a conducting viscoelastic fluid between two parallel plates under a transverse magnetic field	
— <i>P. N. Tandon</i>	45
Note on the forced torsional vibrations of non- homogeneous spherical and cylindrical shells	
— <i>D. M. Mishra</i>	55
On heat transfer in MHD channel flow between conducting walls in slip-flow regime	
— <i>V. M. Soundalgekar</i>	65
Book Reviews	73

September

	<i>Page</i>
Torsional vibration of a composite orthotropic cylinder in a magnetic field	
— <i>Bireswar Ray Chaudhuri</i>	75
Simple cases of torsional vibration of non-homogeneous circular cylinder	
— <i>Sunita Mukherjee</i>	83
Effect of couple-stresses in a non-homogeneous semi-infinite elastic medium	
— <i>G. R. Tiwari</i>	91
Note on the thermoelastic stress in a thin rod of finite length due to some constant temperature applied to its free end, the other end being fixed and insulated	
— <i>Snehanshu Kumar Roy Choudhuri</i>	99
Book Review	107

December

Inclusions in elastic-plastic solids of workhardening material extended to a finite limit	
— <i>P. R. Sengupta and H. N. Kundu</i>	109
Mechanical response in a free piezo-electric plate subjected to a constant flow of heat	
— <i>D. R. Ray</i>	123
On heat transfer in mhd Couette flow between conducting walls in slip-flow regime	
— <i>V. M. Soundalgekar</i>	129
Note on problems of inclusion of inhomogeneous aeolotropic elastic solid in an infinitely extended aeolotropic material	
— <i>Amarnath Basumullick</i>	137
Letter to the Editor	147